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Four New Harvestmen from Thailand (Arachnida,  
Opiliones, Gagrellidae)

*With 4 Text-figures*

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**ABSTRACT** Four new harvestmen from Thailand are described and illustrated: *Systemocentrus luteobiseriatus*, *Gagrella longipes*, *Gagrella thaiensis* and *Metagagrella rufoscutea* (Gagrellidae).

Just recently I had an opportunity to study a collection of Opiliones collected in Thailand by Dr. Hiroyuki WATANABE of Kyoto University. In this material four new species were found together with some known species. Only the new species will be treated here. The holotypes and the specimens used are at present in my collection.

*Systemocentrus luteobiseriatus* n. sp.

(Fig. 1)

**Material.** Holotype ♀: Thailand: Changwat Chiyaphum, Amphoe Khon San, Nam Prom, Khon Kaen, VIII. 1981 (H. WATANABE).

**Measurements** (in mm). ♀. Cephalothorax 2.1 L, 3.5 W; abdomen 4.2 W; total body length 7.9. Leg I: fe 2.9, pa 1.0, ti 2.2, mt+ta 6.5, total length 12.6.

**Female.** Body. Large-sized, of the form as shown in Fig. 1 A–B. Dorsum thickly and uniformly granular, granules rounded and flattened. Anterior median portion of cephalothorax only slightly raised; on this raised area present a few small tuberculations (Fig. 1 D). Scutum armed with a median longitudinal row of five strong spines, spines smooth, sharply pointed, of about equal length. Eye tubercle low, in profile, longer than high, slanting a little posteriorly, not canaliculate, thickly granulated (Fig. 1 C). Coxae sparsely and coarsely, genital plate and free sternites uniformly granular. Marginal row of small humps (Fig. 1 H) present on both sides of coxae I and IV, only anteriorly on II and III.

**Chelicerae.** Normal; segment I unarmed above, II only hairy. Suprachelical lamellae furnished with small tubercles (Fig. 1 D).

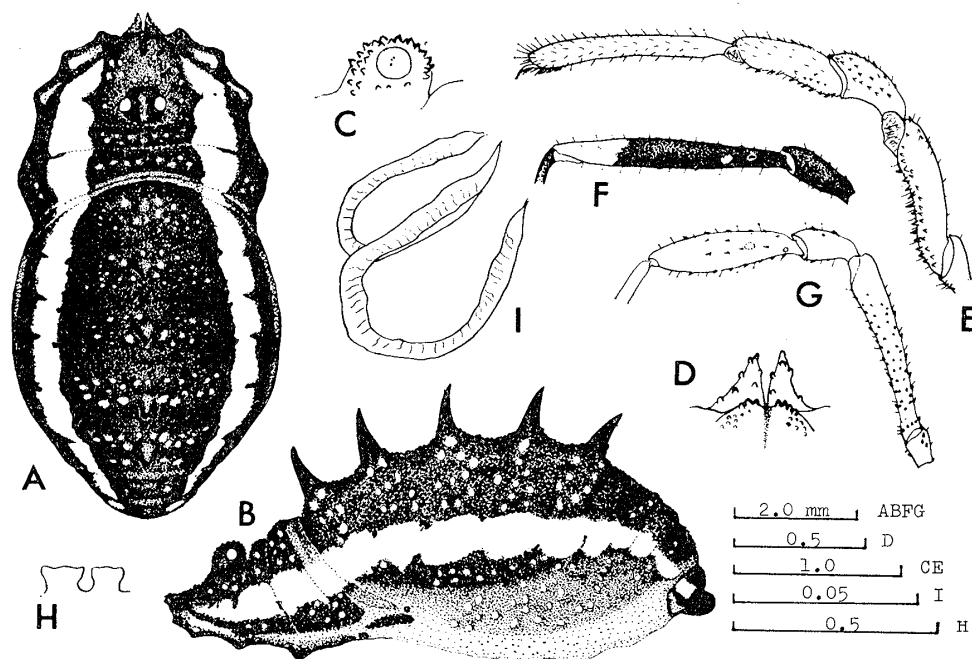


Fig. 1. *Systenocentrus luteobiseriatus* n. sp., ♀.—A, Dorsal, and B, lateral view of body; C, left side view of eye tubercle; D, dorsal view of supracheliceral lamellae; E, ectal view of left palp; F, patella and tibia of leg II; G, trochanter to tibia of leg I; H, small humps on the anterior side of coxa I; I, seminal receptacle.

**Palpi.** Relatively strong; femur, patella and tibia wider than usual, only tarsus slender. Patella without apophysis; armaments as in Fig. 1 E.

**Legs.** Short but strong. Femora I, III and IV thickened distally; all tibiae widened, especially so I, III and IV (Fig. 1 F–G). Femora I and III much shorter than body. All femora lacking noduli. Trochanters laterally and femora throughout toothed, patellae and tibiae with only sparse denticles.

**Coloration.** Dorsum (including eye tubercle and scutal spines) dark to blackish brown, mostly blackish. There is a prominent wide longitudinal stripe of deep whitish yellow on each side, which runs from the anterior margin of cephalothorax to the end of abdomen (third free tergite) (Fig. 1 A–B). On the blackish background of dorsum present numerous scattered yellowish dots. Venter concolorous with dorsum. Chelicerae dark brown, first segment blackish dorsally. Palpi dark brown, but tarsi slightly lighter. Legs dark brown, trochanters blackish with yellowish spots dorsally; caput and distal portion of femora blackish, entire patellae and tibiae black, but second tibiae with a wide apical ring of white (Fig. 1 F).

**Ovipositor.** Of 22 segments; seminal receptacles in the third segment, of the form as in Fig. 1 I.

**Male.** Unknown.

**Remarks.** In the body size and general morphology the present material

strikingly resembles *S. quinquedentatus* SIMON recorded from Thailand and Burma. However, the former differs from the latter in the following respects: the last (fifth) scutal spine is not shorter than the others as in *quinquedentatus*, two prominent wide stripes of whitish yellow run on the dorsum and the second tibiae have a wide apical ring of white.

As to the subfamilial placement of this species there is some doubt. Usually, the Gagrellinae and Leiobuninae are distinguished by the presence or absence of at least one nodule on the second femur. The genus *Systemocentrus* was placed in the Gagrellinae by ROEWER (1923) because of the presence of one nodule on the second femur. However, so far as literature are concerned, the number of noduli has not been described exactly in any of five known species of this genus (excluding the present one). Just recently SUZUKI and TSURUSAKI (1981) published that *S. japonicus* HIRST has noduli not only on the femur II but also on IV, and the noduli number on each femur differs within wide range. From this it is apparent that the *Systemocentrus* that is chiefly characterized by having five scutal spines is heterogeneous in the noduli character; namely, some have noduli (gagrellinians) and others have no noduli (leiobunians). Under this condition the genus must be fully re-examined. After the completion of this generic revision, subfamilial placement of each member will be established.

***Gagrella longipes* n. sp.**

(Fig. 2)

**Material.** Holotype ♀: Thailand: Changwat Chaiyaphum, Amphoe Khon San, Nam Prom, Sakorn Nakhon, 10. X. 1981 (H. WATANABE). Paratype: Data as holotype, 1 pull.

**Measurements** (in mm). ♀. Cephalothorax 1.6 L, 2.7 W; abdomen 2.3W; total body length 3.5. Leg I: fe 10.8, pa 1.1, ti 9.2, mt+ta 26.0, total length 47.1.

**Female.** Body. Of the form as in Fig. 2 A. Carapace nearly smooth, only median area between anterior margin and eye tubercle and lateral curvature above third coxae granular; thoracic tergites, all scutal areas and free tergites uniformly and thickly granular. Scutum armed with two median spines (of about equal length) on first and second areas. Eye tubercle longer than high, slanting posteriorly, canaliculate, the carinae armed with five to six small teeth and below each eye with three teeth. Coxae, genital plate and free sternites smooth. Coxae with a row of small humps (Fig. 2 H) anteriorly on I–IV and posteriorly on I and IV.

**Chelicerae.** Of normal structure; segment I armed with six to seven teeth above, II unarmed. Supracheliceral lamellae furnished with five to six tubercles.

**Palpi.** Very slender and elongated. Patella has a small but distinct apophysis, tibia slightly thickened distally but with no apophysis. Armaments as in Fig. 2 E–F.

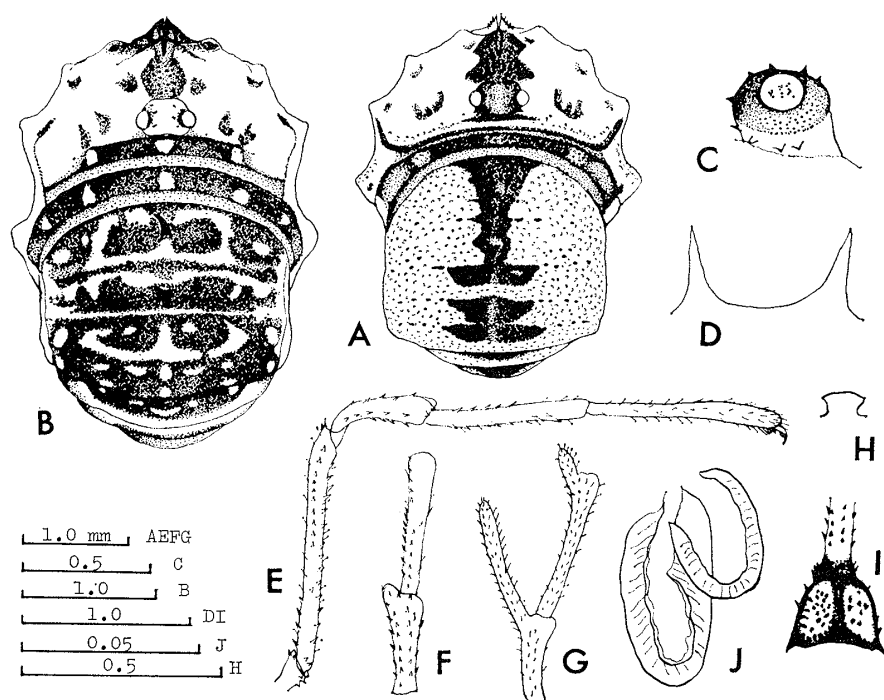


Fig. 2. *Gagrella longipes* n. sp. —A–B, Dorsal view of body: A, adult female holotype, B, immature; C, right side view of eye tubercle; D, right side view of scutal spines; E, ectal view of right palp; F–G, patella and tibia of right palp; F, female holotype, G, immature; H, marginal hump on the anterior side of coxa; I, dorsal view of trochanter and base of femur of right leg; J, seminal receptacle.

Legs. Noduli formula: 0.1.0.0. Trochanters with but few pointed teeth laterally, femora toothed throughout, patellae toothed only dorsally.

Coloration. Dorsum whitish yellow in ground color, with dark brown to blackish markings on carapace and scutum. The markings are as shown in Fig. 2 A. Eye tubercle whitish yellow, dark brown around eyes, scutal spines blackish. Venter silvery-white, coxae smudged proximally with rusty brown, coxal humps dark brown; median area of genital plate and free sternites spotted with pale brown. Chelicerae yellowish brown, first segment somewhat darker. Palpi silvery-white, femur distally and entire patella dark brown. Trochanters of legs blackish brown, with two silvery-white patches dorsally (Fig. 2 I), remaining leg-segments rusty to dark brown, caputs of femora blackish, tibiae with wide apical ring of silvery-white.

Ovipositor. Of 22 segments, seminal receptacles within third segment, of the form as in Fig. 2 J.

Juvenile. Body length 3.0 mm. Apophysis of palpal patella fairly long, 1.5 times as long as the segment, tibia also has a long apophysis (Fig. 2 G), only hairy. Markings as in Fig. 2 B.

Male. Unknown.

*Remarks.* This species seems to be very closely related to *G. quadrimaculata* ROEWER (Burma) and *G. indochinensis* ROEWER (Indo-China). All these species are distinguished from other members of this genus by having the following character combination: 1) Abdominal scutum with two median spines, 2) palpi slender and elongated, 3) first cheliceral segment armed dorsally with teeth, and 4) edge of marginal humps of coxae straightly blunted. However, the present species is separated from *quadrimaculata* by completely different markings on the dorsum, and from *indochinensis* by having much longer legs (i. e. first leg more than 1.5 times longer than that of *indochinensis*) and a wide apical ring of white on the tibiae I–IV. Also the patellar apophysis of palpi of the mature female is much smaller than in *indochinensis*. Furthermore, according to my unpublished data, seminal receptacles differ between the two species, namely, both ampullae are of moderate size in this species, while they consist of large main and very small accessory ampullae in *indochinensis*.

***Gagrella thaiensis* n. sp.**

(Fig. 3)

*Material.* Holotype ♂: Thailand: Changwat Chaiyaphum, Amphoe Khon San, Nam Prom, V. 1981 (H. WATANABE). Paratype: Data as holotype, 1 ♀.

*Measurements* (in mm). ♂ (in parentheses ♀). Cephalothorax 1.3 (1.5) L, 2.8 (2.8) W; abdomen 2.8 (3.2) W; total body length 4.1 (5.4). Leg I: fe 5.2 (3.8), pa 1.0 (0.9), ti 3.6 (3.0), mt+ta 12.1 (10.6), total length 21.9 (18.3). Penis shaft 2.68 L, 0.25 W (base), 0.09 W (middle), glans 0.25 L.

*Male.* Body. Of the form as in Fig. 3 A. Carapace, thoracic tergites, scutum and free tergites thickly and coarsely granular; scutum with two strong spines on first and second areas; spines erect, of about equal length and sparsely granulated. Eye tubercle, from laterally, longer than high, rounded above, canaliculate, on each carina present 3–4 pointed teeth, also below each eye with 3–4 ones. Coxae and genital plate roughly granulated, free sternites finely granular. Small marginal humps (Fig. 3 G) present anteriorly on coxae I–IV and posteriorly on I and IV.

*Chelicerae.* Segment I armed dorsally with two or three sharp-pointed teeth, II with a medial row of small tubercles (Fig. 3 D–E). Supracheliceral lamellae as in Fig. 3 F.

*Palpi.* Patella widened distally but without apophysis, tibia a little thickened basally, slightly curved below; armaments as shown in Fig. 3 C.

*Legs.* Relatively short; femora I and III longer than body. (In the female, although only one individual was used, both femora shorter than body.) Noduli formula: 0.1.0.0. Trochanters armed with sharp-pointed denticles laterally, femora with numerous denticles throughout, patellae dorsally and tibiae proximally with sparse denticles.

*Coloration.* Body and appendages almost blackish brown to black, only

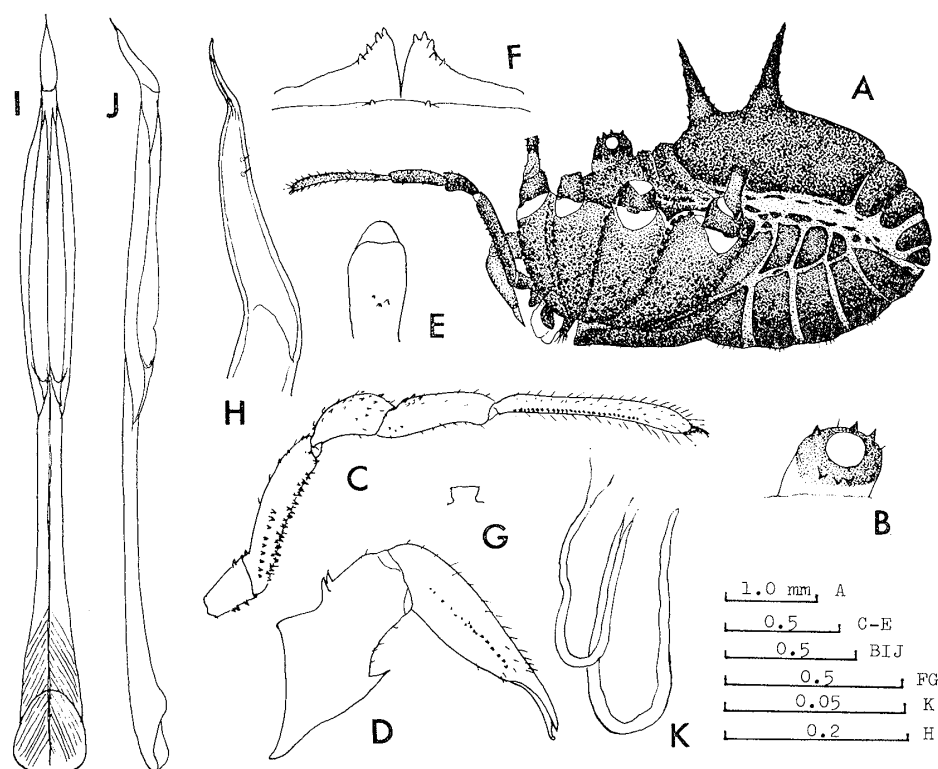


Fig. 3. *Gagrella thaiensis* n. sp.—A, Lateral view of body, ♂; B, left side view of eye tubercle, ♂; C, mesal view of left palp, ♂; D, mesal view of left chelicera, ♂; E, dorsal view of first cheliceral segment, ♂; F, supracheliceral lamellae, ♂; G, marginal hump on the anterior side of coxa I, ♂; H, lateral view of glans; I, ventral, and J, lateral view of entire penis; K, seminal receptacle.

median area in front of eye tubercle reddish yellow and so the base of eye tubercle.

**Penis.** Shaft slender and long, widened proximally; ventral side of basal opening deeply indented. Alate part elongated, extending on the distal half of shaft, tapered into shaft distally and proximally; glans with two pairs of setae near distal end (Fig. 3 H–J).

**Female.** Similar to male in general appearance, but patella and tibia of palpi armed with more numerous teeth and tarsus lacking the definite row of ventral teeth.

**Ovipositor.** Twenty-two segments; seminal receptacles between second and third segments, of the form as in Fig. 3 K.

**Remarks.** The present material is closest to *G. yodoensis* ROEWER, 1954 from Burma in the possession of the following character complexes: 1) Abdominal scutum with two median spines, 2) palpal patella lacking apophysis, 3) first cheliceral segment toothed above; 4) edge of marginal humps of coxae straightly blunted, and 5) body, palpi and chelicerae blackish. However, both the species differ in the armaments of eye tubercle. Namely, in this species the eye tubercle is armed with 3–4 teeth on the carinae and further three teeth below each eye, whereas in *yodoensis*

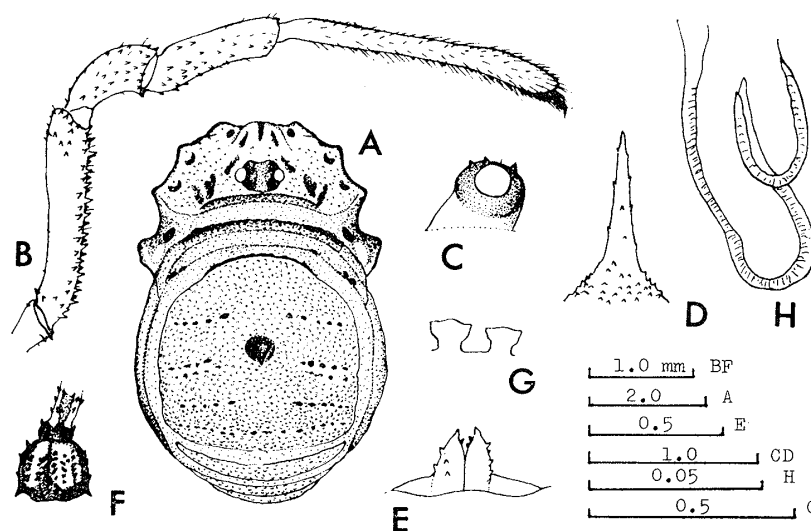


Fig. 4. *Metagagrella rufoscuta* n. sp., ♀.—A, Dorsal view of body; B, ectal view of right palp; C, left side view of eye tubercle; D, left side view of scutal spine; E, supracheliceral lamellae; F, dorsal view of trochanter and base of femur of right leg I; G, marginal humps on the anterior side of coxa I; H, seminal receptacle.

a longitudinal row of 9–10 teeth is present on the carinae but unarmed below each eye. Moreover, the first cheliceral segment is only weakly toothed above in the former but strongly toothed in the latter.

*Metagagrella rufoscuta* n. sp.

(Fig. 4)

**Material.** Holotype ♀: Thailand: Changwat Chaiyaphum, Amphoe Khon San, Nam Prom, X. 1981 (H. WATANABE).

**Measurements** (in mm). ♀. Cephalothorax 1.9 L, 3.9 W; abdomen 4.2 W; total body length 6.4. Leg I: fe 13.5, pa 1.5, ti 11.4, mt 16.2.

**Female.** Body. Of the form as in Fig. 4 A. Surface of dorsum, namely carapace, thoracic tergites, scutum and free tergites thickly granular. Scutum with a median spine on first area only, spine erect, sharp-pointed, sparsely granular. Eye tubercle rounded above, slanting posteriorly, canaliculate, on both sides of the furrow present three small teeth, unarmed below each eye. Coxae and genital plate with sparse tubercles, free sternites smooth. Small marginal humps (Fig. 4 G) present anteriorly on coxae I–IV and posteriorly on I and IV.

**Chelicerae.** Segment I dorsally with one or two granules, II unarmed. Supracheliceral lamellae as in Fig. 4 E.

**Palpi.** Of moderate size; patella without apophysis. Femur armed ventrally with numerous strong teeth and a short proximal row of teeth medially; patella dorsally, tibia laterally and below at base with numerous teeth; tarsus ventrolaterally

with some obsolete teeth (Fig. 4 B).

Legs. Very slender and long; femora I and III much longer than body. Noduli formula: 0.2 (L) or 3 (R).0.0. Trochanters (laterally), femora, patellae and tibiae toothed, metatarsi only proximally with sparse teeth.

Coloration. Surface of dorsum golden to rusty yellow; carapace with many small brown spots as shown in Fig. 4 A. Eye tubercle rusty yellow, widely dark brown around eyes, scutal spine blackish brown. Venter greyish yellow, coxae dotted with light brown, marginal humps dark brown. Chelicerae light rusty yellow, palpi dark brown but tibia distally and tarsus lighter. Trochanters and bases of femora of legs blackish brown, trochanters with two silvery-white patches dorsally (Fig. 4 F); remaining leg-segments rusty to dark brown, femora and tibiae distally and patellae entirely blackish.

Ovipositor. Twenty-seven segments; seminal receptacles between second and third segments, of the shape as in Fig. 4 H.

Male. Unknown.

Remarks. This species seems to show a close affinity with *M. rufa* ROEWER, 1954 from Sikkim because they share the following character complexes: 1) Scutum with one median spine, 2) first cheliceral segment granulated above, 3) palpal tibia without apophysis, 4) edge of coxal humps straightly blunted, and 5) surface of coxae of legs pale. However, the former is separated from the latter in that the eye tubercle is unarmed below each eye and the trochanters and bases of femora of legs are not rusty yellow but blackish brown and two silvery-white patches are present on the trochanters.

The present material, although only one individual was used, showed the number of noduli on the second femora: 2 in the left leg and 3 in the right as described above. This gives us trouble in the generic assignment of this material, because following ROEWER's manner of generic division, the presence of two or three noduli on the second femora characterizes *Metagagrella* and *Gagrellula*, respectively. Provisionally I treated it here as a member of *Metagagrella*. The accurate generic status must be established by future studies.

#### ACKNOWLEDGMENT

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